

**PROVISIONALLY FILED
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EXHIBIT 19

Summary of Opinions for Expert Sherry Emery

Qualifications

I am a Senior Fellow in the Public Health Group and Director of the Social Data Collaboratory at NORC at the University of Chicago. I hold a Ph.D. in City and Regional Planning from the University of North Carolina—Chapel Hill, a Master of Business Administration with a concentration in Business Economics and International Business from Columbia University, and a Bachelor of Arts in Political Economy from Johns Hopkins University.

Before joining NORC at the University of Chicago, I held positions as a research professor at the University of Illinois at Chicago starting in 2001, in both the Department of Economics and the School of Public Health. During my tenure at the University of Illinois at Chicago, I also taught graduate-level courses on Health Economics and Cost Analysis in Health. Prior to joining the faculty at UIC, I served as an Assistant Adjunct Professor in the Department of Family and Preventative Medicine, and a Staff Research Associate at the Cancer Prevention and Control Program, both at the University of California San Diego.

I am a nationally recognized expert in tobacco control, media, and public health policy research. Over the past twenty-four years, my research has focused primarily on the effects of tobacco control communication and policy. I have led numerous research grants and contract research awards investigating how tobacco-related marketing and social media advertising affects tobacco use. Much of my early work involved evaluating the amount and content of smoking-related advertising on television and digital media, and its relationship with smoking-related attitudes, beliefs, and behaviors. In recent years, much of my attention has been directed to developing rigorous and replicable methodologies for collecting and analyzing the

amount, content and effects of tobacco-related content on social media platforms, including Twitter, Instagram, Facebook, Reddit, and YouTube.

My research includes several projects with the Centers for Disease Control and Prevention (CDC), including a current contract evaluating the impact of media marketing and prices of tobacco products on the sales of e-cigarettes. I am the Principal Investigator or co-Investigator on numerous NIH grants investigating the relationship between tobacco-related content on social media and tobacco use among youth and young adults. Among these NIH grants, I was the Principal Investigator on a five-year National Cancer Institute grant that was the first to study tobacco-related information shared on media platforms, and analyze the relationship between that information and attitudes, beliefs, and behavior of smokers and non-smokers. Currently, I am the Principal Investigator of a newly awarded grant investigating the effects of influencer marketing of flavored tobacco products on youth use of such products. I am a co-investigator on a Georgia State University research award studying the effects of social media marketing on awareness, initiation, and behavior of electronic cigarettes. For the past decade, I have been the Principal Investigator on grants awarded by the Truth Initiative, investigating the effects of Truth's media campaigns, as well as the amount, sources and content of tobacco-related posts, including JUUL-related content, across social media platforms. Currently, I am the Principal Investigator of a Robert Wood Johnson Foundation grant, investigating the effects of flavored tobacco bans.

I have published well over 100 articles in dozens of peer-reviewed journals and given hundreds of presentations throughout the country on these topics, including on tobacco advertising on social media, e-cigarette advertising, and youth tobacco usage. For example, in

2016 I published an article in the *Journal of Medical Internet Research* entitled '100 million views of electronic cigarette YouTube videos and counting: Quantification, content evaluation, and engagement levels of videos'; in 2017 I published an article in *Tobacco Control* entitled 'The Impact of Flavour, Device Type, and Warning Messages on Youth Preferences for Electronic Nicotine Delivery Systems: Evidence from an Online Discrete Choice Experiment'; and in 2019 I Published an article in *Tobacco Control* entitled 'Characterising JUUL-related posts on Instagram.'

I am also a reviewer for several peer-reviewed journals, including *Tobacco Control* and *Nicotine & Tobacco Research* (a peer-reviewed journal covering the nature and consequences of tobacco use worldwide). I am a member of the Society for Nicotine and Tobacco Research, Tobacco Health Disparities Research Network, American Public Health Association, and Western Economics Association.

A current copy of my resume, a list of all publications I have authored in the last ten years, and a list of cases in which I have testified as an expert at trial or by deposition is attached hereto as Exhibit A. A list of documents containing facts and data I considered in forming my opinions is attached hereto as Exhibit B. I am being paid \$700 per hour for my work related to this litigation.

Summary of Opinions

JUUL's advertising strategy appealed to youth and caused youth to use JUUL. The tactics used by JUUL to promote its products on social media were remarkably similar to the marketing strategies used by the tobacco industry during the 1980s and 1990s to promote cigarette brands to youth. Those strategies, which included product giveaways, couponing, sponsorship

of youth-oriented events, and product promotion involving youthful brand ambassadors, were found to be highly effective for attracting the attention of youth, fostering brand-recognition among young children and teenagers, and contributing to smoking initiation among teenagers.^{1,2}

JUUL deployed these well-known methods of youth-targeted marketing on social media, which had the effect of making them especially potent. First, youth are more likely to see promotions on social media, compared to adults, because they are more likely than adults to use social media, and youth social media users spend significantly more time on social media platforms than do adult social media users, as most teens have nearly unimpeded access to social media with their smartphones.^{3,4,5} Second, the algorithms used by social media platforms to grow membership and user engagement among key audiences significantly enhance the ability of brands and influencers to target youth audiences and thus engender what is often called 'electronic word of mouth,' wherein regular social media users become

¹ Dell'Aringa S. Joe Camel's Effect on Children/ AAP News Oct 1997, 13 (10).

² Pierce J, Gilpin E, Choi W. Sharing the blame: smoking experimentation and future smoking-attributable mortality due to Joe Camel and Marlboro advertising and promotions. *Tobacco Control* 1999; 8(1):37-44. doi:10.1136/tc 8.1.37.

³ Anderson, M. and J. Jiang. Teens, Social Media & Technology 2018: YouTube, Instagram and Snapchat are the most popular online platforms among teens. Fully 95% of teens have access to a smartphone, and 45% say they are online 'almost constantly'. 2018, Pew Research Center. <https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/> (accessed 4/24/21).

⁴ Smith, A. and M. Anderson, Social Media Use in 2018: A majority of Americans use Facebook and YouTube, but young adults are especially heavy users of Snapchat and Instagram. March 2018, Pew Research Center. <https://www.pewresearch.org/internet/2018/03/01/social-media-use-in-2018>.

⁵ Anderson et al., *supra* note 3.

brand ambassadors when they engage with branded content. JUUL's marketing leveraged such algorithms to specifically reach youth via hashtags, and community/influencer marketing. Third, social media marketing is particularly effective among youth audiences because the social nature of marketing on these platforms directly appeals to the neurological and social developmental stages of adolescence, where the need to belong and connect with peers is greatest. Thus, JUUL's social media marketing was exceptionally effective because youth have greater opportunities for exposure to promotional posts; youth-targeted algorithms multiplied the likelihood of youth exposure to JUUL's promotional posts; and both the message (JUUL promotion with youth-appealing themes) and the medium (social advertising) are particularly potent among adolescents. It is my opinion that the exponential growth in popularity of JUUL use among youth is largely due to JUUL's promotional messaging that directly appealed to youth culture and their strategic use of the unique mechanisms of social media marketing.

Tobacco Industry Marketing and Regulation

The tobacco industry has a long history of targeting youth with their advertising and promotion. Indeed, many of the strategies used by JUUL hew closely to the highly effective cigarette advertising and promotional strategies that were eventually banned in 1998, when 42 states settled lawsuits against the major cigarette producers. This settlement is referred to as the Master Settlement Agreement (MSA). Several provisions of the MSA identified and banned strategies the industry had used for decades to target cigarette advertising to youth.

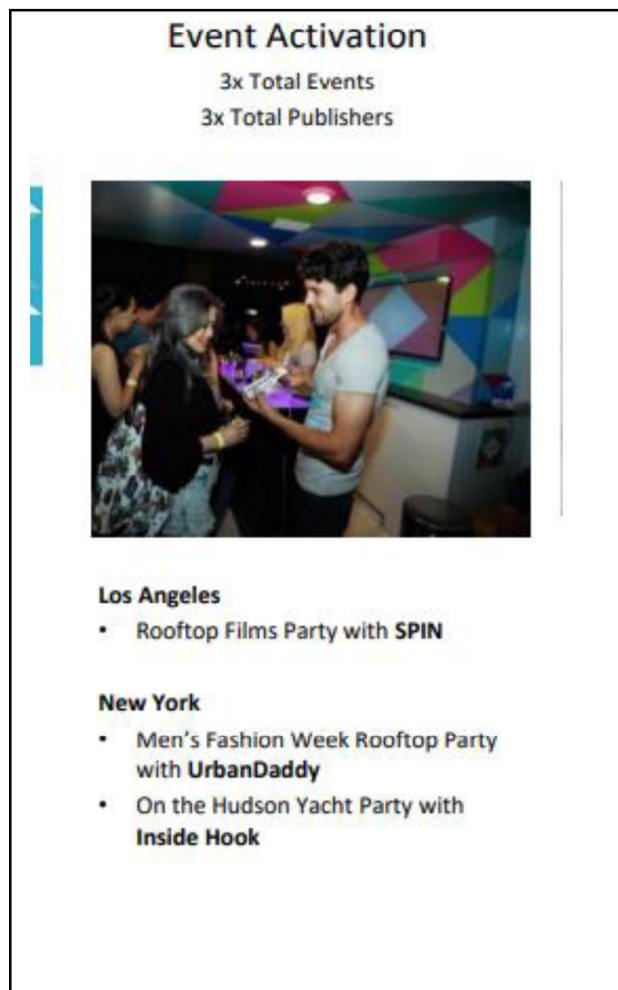
Specifically, the MSA:

- Forbids participating cigarette manufacturers from directly or indirectly targeting youth;

- Bans or restricts cartoons, transit advertising, most forms of outdoor advertising, including billboards, product placement in media, branded merchandise, free product samples (except in adult-only facilities), and most sponsorships; and
- Imposes significant prohibitions or restrictions on advertising, marketing and promotional programs or activities.”⁶

The MSA defined youth targeting to include use of cartoon imagery and sponsorship of cultural events that attract youth audiences, including “(A) concerts; or (B) events in which the intended audience is comprised of a significant percentage of Youth; or (C) events in which any paid participants or contestants are Youth; or (D) any athletic event between opposing teams in any football, basketball, baseball, soccer or hockey league.”⁷ Although cigarette branded event sponsorship is not allowable under the MSA, JUUL’s early marketing strategies included many sponsored events primarily

Figure 1: JUUL Event Sponsorship



(source: JLI00483923_HIGHLY%20CONFIDENTIAL_pptx.pdf)

⁶ Master Settlement Agreement, Public Health Law Center, <https://publichealthlawcenter.org/topics/commercial-tobacco-control/commercial-tobacco-control-litigation/master-settlement-agreement> (accessed 4/23/2021).

⁷ Master Settlement Agreement at 14.

meant to distribute free samples of JUUL devices and flavored pods to a youthful audience. These youth-oriented events featured youthful influencers in ‘cool’ locations that would directly appeal to youth, and usually were based on popular music or movies.⁸ For example, JUUL sponsored a rooftop party in 2015 that was co-hosted by the music webzine SPIN (please see Figure 1). SPIN covers emerging trends in the music industry, and is popular among youth and young adults who follow music. According to their own internal marketing strategy documents, the partnership with SPIN enabled JUUL to “borrow brand equity” from the popular webzine.⁹ A key point is that the MSA prohibits concert sponsorship precisely because music events attract youth audiences. JUUL’s music-themed rooftop event illustrates that their marketing strategies exploited the regulatory gap that exists because the MSA does not mention electronic cigarettes.

Further, the MSA specifically addressed cigarette product placement in media generally, and specifically media, such as video games or movies, with youth audiences, where youth exposure is likely. The MSA thus made it illegal for cigarette manufacturers to “make, or cause to be made, any payment or other consideration to any other person or entity to use, display, make reference to or use as a prop any Tobacco Product, Tobacco Product package, advertisement for a Tobacco Product, or any other item bearing a Brand Name in any motion

<https://www.publichealthlawcenter.org/sites/default/files/resources/master-settlement-agreement.pdf> (accessed 4/23/2021).

⁸ Jackler R, Chau C., Getachew B, Whitcomb M, Lee-Heidenreich J, Bhatt AMKim-O’Sullivan S, Hoffman Z, Jackler L, Ramamurthi D. JUUL Advertising Over its First Three Years on the Market. SRITA White Paper, Stanford University School of Medicine 801 Welch Road Stanford, CA, 94305. Published: January 31, 2019.

⁹ JUUL 2015 Marketing, March 2015. INREJUUL_00370796.

picture, television show, theatrical production or other live performance, live or recorded performance of music, commercial film or video, or video game ("Media")."¹⁰ JUUL's use of social media influencers enabled them to flout this provision. For example, JUUL engaged Nora Lum (known as 'Awkwafina'), who herself was a very young adult at the time, providing her with discounted JUUL products, and working with her to incorporate her JUUL use and to feature JUUL devices into her public posts on Instagram.¹¹ This is an egregious example of a product placement strategy identified and banned in the MSA for cigarette promotion, and this is just one of numerous examples of JUUL's active social media influencer campaigns.

The MSA's prohibition of outdoor advertising included not only a prohibition of newly placed outdoor advertising, but also a requirement to remove all existing "(A) billboards (to the extent that such billboards constitute Outdoor Advertising) advertising Tobacco Products; (B) signs and placards (to the extent that such signs and placards constitute Outdoor Advertising) advertising Tobacco Products in arenas, stadiums, shopping malls and Video Game Arcades; and (C) Transit Advertisements advertising Tobacco Products" within the settling states.¹² These provisions effectively eliminated incidental youth exposure to cigarette ads in public places that youth could not avoid or that specifically attracted youth. In 1998, when the MSA was finalized, youth typically gathered and socialized in public spaces, such as malls and arcades. Today, such activity often takes place on social media. Thus, the type of incidental exposure to cigarette advertising that the MSA banned, was exactly the intention and effect of both JUUL's branded

¹⁰ Master Settlement Agreement, *supra* note 7 at 17.

¹¹ Jun. 21, 2018 Email from Nora Walker to Chelsea Kania. JLI00326487.

¹² Master Settlement Agreement, *supra* note 7 at 16.

posts and paid influencer posts on social media platforms. These posts and youth exposure to them were then amplified by active engagement and reposting by individual social media users.

The prohibitions of the MSA were sweeping and had immediate effects. Cigarette smoking rates among youth decreased significantly and consistently in the two decades following the MSA.¹³ The MSA, however, only covered cigarettes, and subsequently smokeless tobacco, and was written before social media was invented and thus before social media became important advertising platforms for all types of products, brands, and services. Many of the promotional strategies used by JUUL conform closely to those banned in the MSA.

Youth Were Largely Uninterested in Electronic Cigarettes Prior to JUUL

In 2007, a new type of tobacco product entered the US market, electronic cigarettes. These novel devices were shaped like traditional cigarettes, but did not burn tobacco. Adult use of electronic cigarettes grew modestly between 2007 and 2017.¹⁴ Before JUUL entered the market in 2015, the early e-cigarette products were not widely adopted and not commonly used by youth. In 2011, fewer than 5% of US youth 12-17 had ever tried an e-cigarette, and only 1.1% reported using e-cigarettes in the past 30 days (current use).¹⁵ Youth e-cigarette

¹³ U.S. Department of Health and Human Services. *E-Cigarette Use Among Youth and Young Adults. A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2016.

¹⁴ McMillen R, Gottlieb M, Shaefer R, Winickoff J, Klein J. Trends in Electronic Cigarette Use Among U.S. Adults: Use is Increasing in Both Smokers and Nonsmokers. *Nicotine Tob Res.* 2015;17(10):1195-1202. doi:10.1093/ntr/ntu213.

¹⁵ U.S. Department of Health and Human Services, *supra* note 13.

users frequently stopped using because of the bad taste, high cost, and losing interest or not perceiving the products as cool.¹⁶

JUUL's Introduction in 2015

In 2015, JUUL Labs introduced the first pod-based nicotine salt electronic cigarette devices to the US market. These devices offered a unique design that specifically appealed to youth for several reasons. First, the device is sleek and small, resembling a flash drive. In its 'party mode', the inconspicuous device can light up in a variety of colors. Thus, in its usual mode, the device itself is easily concealable from adults, such as parents and teachers, and yet simultaneously easily recognizable to youth; in its party mode, the device signals both rebellion and belonging among youth users. Further, the packaging design was sleek, colorful, and intentionally appealing to youth; the four-pod packs encouraged sharing and social selling (described in more detail below) among youth.¹⁷

The novel formulation of nicotine salts contained in JUUL pods made the user experience smoother, reducing the harshness of the vapor, compared to other electronic cigarettes. At the same time, the nicotine salts enhanced the delivery of nicotine, providing a more potent dose of nicotine with each inhalation. Because JUUL's novel nicotine salt formulation is more efficient at delivering nicotine than earlier versions of electronic cigarettes, it is especially

¹⁶ Kong G, Morean E, Cavallo D, Camenga D, Krishnan-Sarin S. Reasons for Electronic Cigarette Experimentation and Discontinuation Among Adolescents and Young Adults. *Nicotine Tob Res.* 2015;17(7):847-854. doi:10.1093/ntr/ntu257.

¹⁷ Kong G, Morean E, Cavallo D, Camenga D, Krishnan-Sarin S. Sources of Electronic Cigarette Acquisition among Adolescents in Connecticut. *Tobacco Regulatory Science.* 2017;3(1):10-16. doi:10.18001/TRS.3.1.2

addictive for nicotine-naïve adolescents.¹⁸ But the majority of youth and young adults who used JUUL did not know that JUUL was designed to contain nicotine.¹⁹ Furthermore, because the adolescent brain is still developing, it is especially sensitive to novel experiences. Thus, exposure to nicotine at this developmental stage can cause physiologic changes in the brain's nicotine receptors, which sensitize the brain to nicotine and other drugs, priming it for future substance use.²⁰

JUUL also offered flavors that appealed to youth, such as Mango, Mint, and Creme.²¹ The proliferation of appealing flavors in the high-concentration e-liquids²² used in these devices

¹⁸ Romer D, Duckworth AL, Sznitman S, Park S. Can adolescents learn self-control? Delay of gratification in the development of control over risk taking. *Prev Sci*. 2010;11(3):319-330. doi:10.1007/s11121-010-0171-8.

¹⁹ JUUL on YouTube, Examining Viral Vaping Videos and the Youth E-Cigarette Epidemic. March 2020, Truth Initiative. <https://truthinitiative.org/research-resources/tobacco-pop-culture/juul-youtube>.

²⁰ Yuan M, Cross S, Loughlin S, Leslie F. Nicotine and the adolescent brain. *J Physiol*. 2015;593(16):3397-3412. doi:10.1113/JP270492.

²¹ Pepper J, Ribisl K, Brewer N. Adolescents' interest in trying flavoured e-cigarettes. *Tobacco Control* 2016; 25:ii62-ii66.

²² According to the FDA, e-liquids are solutions that may contain nicotine, as well as varying compositions of flavorings, propylene glycol, vegetable glycerin, and other ingredients. The liquid is heated to create an aerosol that the user inhales. Vaporizers, E-Cigarettes, and other Electronic Nicotine Delivery Systems (ENDS). 2020, U.S. Food and Drug Administration. <https://www.fda.gov/tobacco-products/products-ingredients-components/vaporizers-e-cigarettes-and-other-electronic-nicotine-delivery-systems-ends> (Accessed 8/20/20).

further compounds the risk of addiction. Indeed, the vast majority of youth who use e-cigarettes initiate with and prefer using flavored products.^{23,24}

Finally, JUUL prominently featured the appealing product attributes in its traditional and aggressive social media marketing campaigns. As described above, JUUL both directly applied and also adapted the very strategies the cigarette companies used to great effect to promote youth cigarette use prior to the MSA,²⁵ and which cigarette companies continue to use to great effect in international markets.²⁶

Coincident with the introduction and aggressive marketing of JUUL in the US market, youth prevalence of e-cig use in the US has doubled each year since 2015, culminating with recent estimates showing one in four 12th-grade students used electronic cigarettes in the past 30 days.²⁷ With the introduction of “nicotine salt”-based JUUL vaporizer products, e-cigarette use increased 77.8% (from 11.7% to 20.8%) among high school students and 48.5% (from 3.3% to 4.9%) among middle school students between 2017 and 2018.²⁸ In 2019, a study found that

²³ Wang T, Gentzke A, Creamer M, et al. Tobacco Product Use and Associated Factors Among Middle and High School Students — United States, 2019. *MMWR Surveill Summ* 2019;68(No. SS-12):1–22. DOI: <http://dx.doi.org/10.15585/mmwr.ss6812a1>.

²⁴ Rose S, Johnson A, Glasser A, et al. Flavour types used by youth and adult tobacco users in wave 2 of the Population Assessment of Tobacco and Health (PATH) Study 2014–2015. *Tobacco Control* 2020;29:432–446. doi: 10.1136/tobaccocontrol-2018-054852.

²⁵ Jackler et al., *supra* note 8.

²⁶ Sheila Kaplan, Big Tobacco’s Global Reach on Social Media. 2018, NY Times. <https://www.nytimes.com/2018/08/24/health/tobacco-social-media-smoking.html>

²⁷ U.S. Department of Health and Human Services, *supra* note 13.

²⁸ Gentzke A, Creamer M, Cullen K, et al. Vital Signs: Tobacco Product Use Among Middle and High School Students — United States, 2011–2018. *MMWR Morb Mortal Wkly Rep* 2019;68:157–164. DOI: <http://dx.doi.org/10.15585/mmwr.mm6806e1>external icon.

more than 1 in 4 twelfth graders, more than 1 in 5 tenth graders, and more than 1 in 11 eighth graders used e-cigarettes,²⁹ and over 60% of youth reported that JUUL was their usual brand.³⁰ Among high school and middle school students who used e-cigarettes, popular reasons included curiosity, the availability of appealing flavors, and the ability to use them unnoticed at home or school.³¹

JUUL's Strategic Use of Social Media Marketing

JUUL's extraordinary rapid rise in popularity followed the exponential growth in social media posts about JUUL.³² As brand recognition grew, JUUL became an eponym for pod-based nicotine delivery devices; just as Kleenex is commonly used in reference to tissues, Xerox to photocopiers, JUUL became the moniker for any pod-based nicotine vaping device.

JUUL's Hashtag Strategies

Social media promotion often incorporates hashtagged content, which can be used to signify a brand, concept, event, or phrase. Hashtags allow users to tag their message as belonging to a current discussion or issue, affecting both the searchability and visibility of

²⁹ Miech R, Johnston L, O'Malley P, Bachman JG, Patrick ME. Trends in adolescent vaping, 2017-2019. *N Engl J Med*. 2019b;381(15):1490–1. <https://doi.org/10.1056/NEJMc1910739>.

³⁰ Cullen K, Gentzke A, Sawdey M, et al. e-Cigarette Use Among Youth in the United States, 2019. *JAMA*. 2019;322(21):2095–2103. doi:10.1001/jama.2019.18387

³¹ Wang et al., *supra* note 23.

³² Huang J, Duan Z, Kwok J, Binns S, Vera L, Kim Y, Szczypka G, Emery S. Vaping versus JUULing: how the extraordinary growth and marketing of JUUL transformed the US retail e-cigarette market. *Tobacco Control* 2019;28:146-151. doi: 10.15585/mmwr.ss6812a1.

posts.^{33,34} Research shows that hashtags are frequently used to publicize products, invite discussion, label opinions and events, mobilize action, and signify relationships (e.g., group membership, shared lifestyle interests).³⁵ Consumers who actively engage with branded content with hashtags are also more likely to share that branded content across different forms of social media. Therefore, by including hashtags in advertisements, brands implicitly encourage consumers to share their advertisement throughout social media.³⁶ Importantly, hashtags are also key features in the algorithms social media platforms use to feature trending topics and deliver posts targeted to a user's interests.

JUUL's use of hashtags (#JUUL) in its advertising campaigns predictably led to users both sharing JUUL's paid advertising content, and also to users adopting the JUUL hashtag in their own posts, further propagating brand mentions into peer-to-peer conversations on social media. As the JUUL brand became increasingly popular, the JUUL hashtag and innumerable hashtag variants that included 'juul' in the string of characters became 'clickbait'. In other words, precisely because JUUL was so popular and had such prominent brand recognition, social media users included the #juul hashtag or variants of #juul, like #juulgang, #doit4juul, and

³³ Stathopoulou A, Borel L, Christodoulides G and West D. (2017), Consumer Branded #Hashtag Engagement: Can Creativity in TV Advertising Influence Hashtag Engagement?. *Psychol. Mark.*, 34: 448-462. doi: <https://doi.org/10.1002/mar.20999>.

³⁴ Hodson J , Dale A, and Petersen B. 2018. "The Instagram #climatechange Hashtag Community: Does It Impact Social Capital and Community Agency?." *The International Journal of Interdisciplinary Environmental Studies* 12 (3): 17-35. doi:10.18848/2329-1621/CGP/v12i03/17-35.

³⁵ Jeffares, S., *Interpreting Hashtag Politics: Policy Ideas in an Era of Social Media*. 2014, New York, NY: Palgrave MacMillan.

³⁶ Stathopoulou et al., *supra* note 33.

the like, to indicate belonging, attract audience, and to optimize platform search algorithms. Thus, accounts of e-cigarette vendors, youth, and promoters of JUUL, JUUL-compatible and competitors to JUUL increasingly used #juul and its variants in their posts. As a result, the brand name of JUUL had a viral explosion of mentions across social media platforms.

JUUL's Social Selling

Social selling is a common marketing strategy that is perfectly suited to social media. Social selling includes native advertising, sponsored electronic-word-of-mouth, and social media influencer promotion.³⁷ Native advertising is content that is placed in an online publication, such as a webzine, which resembles the publication's editorial content but is paid for by an advertiser and intended to promote the advertiser's product, blurring the lines between advertising and content. Early in its product life, JUUL cultivated native advertising relationships with several webzines popular among youth, including VICE (a pop-culture focused publication marketed as the “#1 youth media company”),³⁸ HypeBeast, Twitter (via Twitter's Opera Media), SPIN, and Urban Daddy. Please see Figure 2 for an example of JUUL's Native Advertising.³⁹ According to JUUL's strategic media plan,⁴⁰ these promotional relationships enabled JUUL to achieve “digital domination” by “appropriate positioning” and “efficient targeting” of their product with their target audiences. This strategy resulted in nearly 280 million impressions for

³⁷ Czaplicki L, Kostygina G, Kim Y, et al. Characterising JUUL-related posts on Instagram. *Tobacco Control* 2020;29:612-617. doi: <http://dx.doi.org/10.1136/tobaccocontrol-2018-054824>.

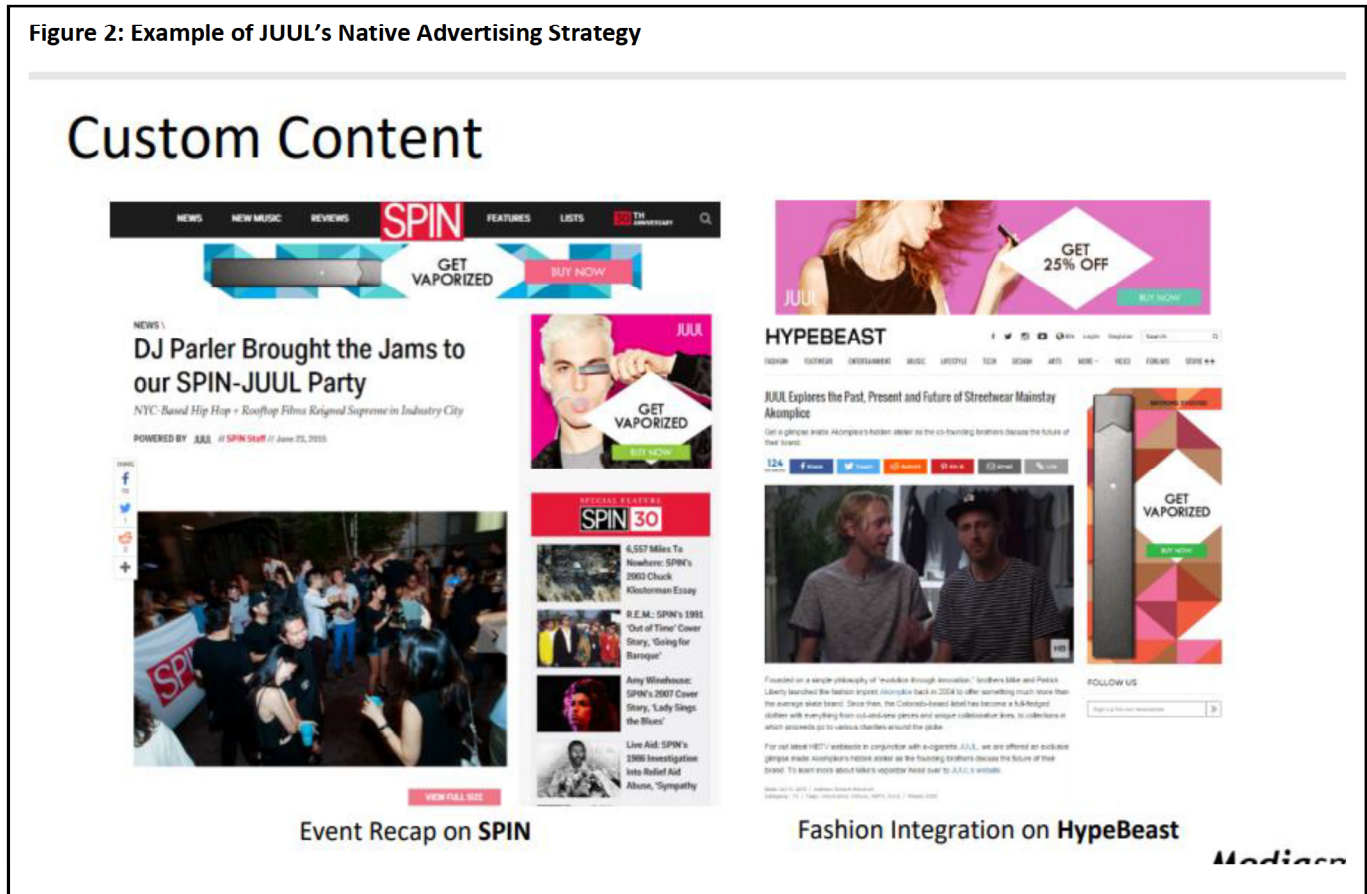
³⁸ Jackler et al., *supra* note 8.

³⁹ JUUL 2015 Media Recap, Mediasmith. JLI00483923, p. 15

⁴⁰ JUUL 2015 Marketing, March 2015. INREJUUL_00370796, p. 5.

JUUL's sponsored content and nearly half a million clicks on that content, taking users to JUUL's own website.⁴¹

Figure 2: Example of JUUL's Native Advertising Strategy



Similar to native advertising, sponsored electronic word of mouth (EWOM) is sponsored content promoting a product, posted on social media in messages that are made to look in format and style like the content that is posted by other users from a person's network of online friends or within a person's social media newsfeed.⁴² Social media influencer promotion

⁴¹ JUUL 2015 Media Recap, Mediasmith. JLI00483923, p. 6.

⁴² Boerman, S, Willemsen L, & Van Der Aa E. (2017). "This Post Is Sponsored": Effects of Sponsorship Disclosure on Persuasion Knowledge and Electronic Word of Mouth in the Context of Facebook. *Journal of Interactive Marketing*, 38, 82-92.

takes EWOM a step further, paying social media influencers--who have a large and dedicated social media following, and are typically admired and viewed as experts or opinion leaders by their audience--to mention their product, feature the product or show themselves using the product in their social media posts. Influencer marketing offers access to potential consumers who are members of influencers' social media networks and who may be susceptible to or already interested in the product category. Mobile devices turn influencers into constant companions of the target audience.⁴³ JUUL actively cultivated influencers by providing artists, models, and entertainers, like Awkwafina and BlackBear, with incentives, including highly discounted product, and coupons, to promote JUUL across their social media accounts, thus exposing millions of youth to JUUL's product in a context that seemed intimate, authentic, and aspirational.^{44,45} The resulting image JUUL created resonated with underage teens who aspired to be like these influencers that JUUL recruited.⁴⁶

Social selling strategies, like those used by JUUL, are both exceedingly effective and concerning because youth and young adults heavily use social media,⁴⁷ and are highly

<https://doi.org/10.1016/j.intmar.2016.12.002> .

⁴³ A New Marketing Royalty: Why Digital Influencers Are on the Rise. 2017, Knowledge@Wharton. <https://knowledge.wharton.upenn.edu/article/new-marketing-royalty-rise-digital-influencers/>.

⁴⁴ Jan. 25, 2018 Email from Kevin Delaney to Jessica Edmonson. JLI00447262.

⁴⁵ Mar. 21, 2018 Email from Jessica Edmonson to Nora Lum. JLI 00535011.

⁴⁶ Jackler et al., *supra* note 8.

⁴⁷ Smith et al., *supra* note 4.

susceptible to social and peer influences.^{48,49} Because social media facilitate social connections, these platforms can shape social norms around risk behaviors like tobacco use.^{50,51,52,53,54}

Recent evidence demonstrates that youth exposure to JUUL-related social media content is significant, and may lead to product use among youth and young adults.^{55,56,57,58}

⁴⁸ Foulkes L, Blakemore S. Is there heightened sensitivity to social reward in adolescence? *Curr Opin Neurobiol*. 2016 Oct;40:81-85. doi: 10.1016/j.conb.2016.06.016.

⁴⁹ Sumter S, Bokhorst C, Steinberg L, Westenberg P. The developmental pattern of resistance to peer influence in adolescence: will the teenager ever be able to resist? *J Adolesc*. 2009 Aug;32(4):1009-21. doi: 10.1016/j.adolescence.2008.08.010.

⁵⁰ Litt D, Stock M. Adolescent alcohol-related risk cognitions: the roles of social norms and social networking sites. *Psychol Addict Behav*. 2011 Dec;25(4):708-13. doi: 10.1037/a0024226.

⁵¹ Salimian P, Chunara R, Weitzman E. Averting the perfect storm: addressing youth substance use risk from social media use. *Pediatr Ann*. 2014 Oct;43(10):411. doi: 10.3928/00904481-20140924-08.

⁵² Hébert E, Case K, Kelder S, Delk J, Perry C, Harrell M. Exposure and Engagement With Tobacco- and E-Cigarette-Related Social Media. *J Adolesc Health*. 2017 Sep;61(3):371-377. doi: 10.1016/j.jadohealth.2017.04.003.

⁵³ Jackson K, Janssen T, Gabrielli J. Media/Marketing Influences on Adolescent and Young Adult Substance Abuse. *Curr Addict Rep*. 2018 Jun;5(2):146-157. doi: 10.1007/s40429-018-0199-6.

⁵⁴ Pokhrel P, Fagan P, Herzog T, Laestadius L, Buente W, Kawamoto C, Lee H, Unger J. Social media e-cigarette exposure and e-cigarette expectancies and use among young adults. *Addict Behav*. 2018 Mar;78:51-58. doi: 10.1016/j.addbeh.2017.10.017.

⁵⁵ Jackson et al., *supra* note 52.

⁵⁶ Pokhrel et al., *supra* note 53.

⁵⁷ Kim A, Chew R, Wenger M, Cress M, Bukowski T, Farrelly M, Hair E. Estimated Ages of JUUL Twitter Followers. *JAMA Pediatr*. 2019 Jul 1;173(7):690-692. doi: 10.1001/jamapediatrics.2019.0922. Erratum in: *JAMA Pediatr*. 2019 Jul 1;173(7):704.

⁵⁸ Sawdey M, Hancock L, Messner M, Prom-Wormley E. Assessing the Association Between E-Cigarette Use and Exposure to Social Media in College Students: A Cross-Sectional Study. *Subst Use Misuse*. 2017 Dec 6;52(14):1910-1917. doi: 10.1080/10826084.2017.1319390.

JUUL on Social Media

JUUL-related content on social media is abundant.^{59,60,61} Studies investigating JUUL-specific content on social media found that posts or videos frequently highlighted JUUL's appeal (e.g.,

sleek design, flavors) and often offered

Example of Incentivized Friend Tagging:

"GIVEAWAY: 1.Tag your fave juul partner and have them tag you back 2.You and your friend like the posts 3. must follow @juul.girls to be eligible"

promotional deals. Incentivized

promotions leveraged social

connections, like tagging (mentioning

the individual's social media handle/name) friends in a post or mentioning a social community in exchange for discount codes or coupons. Further, content analyses of JUUL-related posts demonstrate JUUL's integration into youth culture (e.g., use at school, cartoons/memes) and vape-specific communities.^{62,63,64}

JUUL on Twitter

⁵⁹ Huang et al., *supra* note 32.

⁶⁰ Allem J, Dharmapuri L, Unger J, Cruz T. Characterizing JUUL-related posts on Twitter. *Drug Alcohol Depend.* 2018;190:1-5. doi:10.1016/j.drugalcdep.2018.05.018.

⁶¹ Kavuluru R, Han S, Hahn E. On the popularity of the USB flash drive-shaped electronic cigarette Juul. *Tob Control.* 2019 Jan;28(1):110-112. doi: 10.1136/tobaccocontrol-2018-054259.

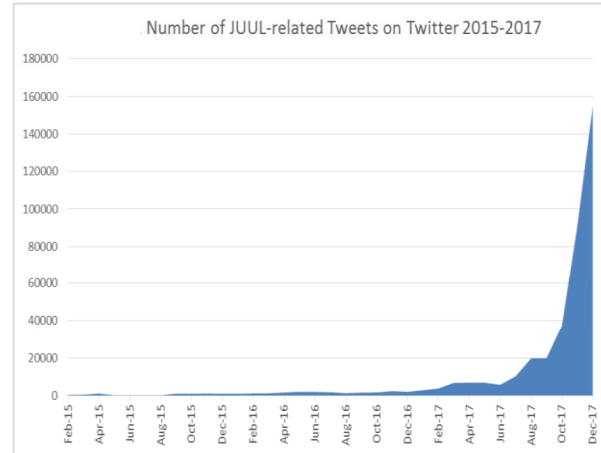
⁶² Huang et al., *supra* note 32.

⁶³ Allem et al., *supra* note 59.

⁶⁴ Kavuluru et al., *supra* note 60.

Approximately one in three teens had Twitter accounts during the period between 2015 and 2018.⁶⁵ At the end of 2016, the number of JUUL-related tweets began to grow exponentially, reaching an inflection point in 2017, shown in Figure 3. Importantly, this growth continued to accelerate through 2018, increasing by a factor of 67, from 18,849 Tweets in the first quarter of 2017 to 1.3 million in the last quarter of 2018. During the same period, the total of non-JUUL electronic cigarette-related tweets decreased by 25%.⁶⁶ While the vast majority of tweets containing JUUL references were not posted by JUUL's official account, without the original JUUL promotional content posted by @JUULVapor and their community of influencers, the other Twitter users would not have shared JUUL content so prolifically.

Figure 3: Exponential Growth of JUUL on Twitter



(source: Huang et al., *supra* note 32)

Notably, at the same time that the amount of JUUL-related tweets began to increase exponentially, sales of JUUL products also increased exponentially.⁶⁷ In fact, the two data series were nearly perfectly correlated, with a correlation coefficient of 0.968. Importantly, an ordinary least square regression that regressed JUUL quarterly sales on the number of JUUL-

⁶⁵ Anderson et al., *supra* note 3.

⁶⁶ Kim Y, Emery S, Vera L, David B, Huang J. At the speed of Juul: measuring the Twitter conversation related to ENDS and Juul across space and time (2017-2018). *Tob Control*. 2021 Mar;30(2):137-146. doi: 10.1136/tobaccocontrol-2019-055427.

⁶⁷ Huang et al., *supra* note 32.

related tweets revealed that the number of tweets alone accounted for 93% of variation in JUUL sales in retail stores.⁶⁸

In a study that used machine learning to estimate the age of Twitter users who followed the official @JUULVapor Twitter account in 2018, Kim and colleagues estimated that nearly half (44.9%) were youth (13-17 years old), and 80% were younger than 21 years old.⁶⁹ It is unlikely that JUUL's social media marketing team would not have had access to their official account analytics, which would provide them with much of the same type of information that was used by Kim and colleagues to estimate followers' ages. Furthermore, it is also highly unlikely that JUUL's social media marketing team could have avoided noticing the exponential growth in the number of tweets that contained #JUUL or other JUUL-related terms.

JUUL on Instagram: Amount and Content

In 2018, 72% of US teens reported using Instagram,⁷⁰ and JUUL-related content was prevalent on the platform at that time. During a three-month period (March-May) in 2018, a search of Instagram, using JUUL-related hashtags retrieved nearly 15,000 JUUL-relevant posts by more than 5,200 accounts. Sample hashtag search terms included #juul, #juuling, #juulvapor, #juulpod, #switchtojuul, and #juulgang. All posts by the official JUUL account (@juulvapor) and JUUL-related accounts with the highest number of followers at the time of data collection were

⁶⁸ Huang et al., *supra* note 32.

⁶⁹ Kim et al., *supra* note 56.

⁷⁰ Anderson et al., *supra* note 3.

collected (e.g., @juulcentral, @juulnation, @juul_university, @juul.girls, @juul.tv).⁷¹ While Instagram has an age-gating feature, allowing accounts to require age verification before users can follow or view content, JUUL did not use this feature for its owned accounts, nor for any affiliated influencer accounts. Nearly all posts collected by these search terms (87%) contained #juul, in addition to any other JUUL-related hashtags.⁷² Approximately one-third of the JUUL-related posts were promotional, featuring overt JUUL promotion, giveaways and direct user engagement strategies, including incentivized friend tagging.

- Nearly nine in ten posts contained no mention of nicotine or addiction whatsoever.
- Although slightly over one in ten posts contained mentions of nicotine and addiction, most frequently normalized or celebrated addiction, rather than cautioning about the risk of addiction. Nicotine-related posts featured terms like #nichead, #juulbuzz, #morningbuzz and featured memes and hashtags and compared the addictive nature of nicotine to craving chocolate, addiction to video games, or binge-watching television shows. Whereas in the past, addiction was used by prevention campaigns to illustrate a risk of tobacco use; the JUUL-related posts featured addiction as a positive or normalized condition.
- Over half of the 15,000 posts (55%) contained youth related content, including memes, cartoon imagery, flavors, product add-ons (e.g., wraps for the JUUL device, that enable users to customize their device with decorations that project their own

⁷¹ Czaplicki et al., *supra* note 37.

⁷² Czaplicki et al., *supra* note 37.

- style), stealth vaping in school, class or at home, or other places frequented by youth, including video games. For example, posts would frequently co-mention JUUL and Fortnite, the video game where millions of players congregate to play or watch their favorite gamers play. In addition, such posts often mentioned use of JUUL by celebrity/musicians popular with youth (e.g., use by Katy Perry, Jennifer Lawrence, Lil Skies the rapper, etc.). The youth themes both attract and reflect the youth audience for JUUL-related posts.
- Nearly 60% of the JUUL-related posts included lifestyle related including mentions of online or offline communities and peer groups (e.g., juulnation, doit4juul, collegelife, juulgirls, juulgang, vapeusa, collegedaily, vapelyfe hashtags) as well as JUUL use during social activities, events, social acceptance of JUULing and any mentions of JUULing as a characteristic of cultural or social identity.⁷³ The lifestyle posts reflect and encourage social connection via creating and participating in communities of JUUL enthusiasts.⁷⁴

JUUL on Instagram: Sources and Types of Instagram Accounts Posting JUUL-related Content

Analyses of the types of accounts posting about JUUL during the period of observation identified three account types: commercial, community, and organic users. Commercial accounts were defined as JUUL's own account, along with accounts affiliated with the retailers, promoters, or manufacturers of pod-based vaporizers, including JUUL, or attempting to sell

⁷³ Czaplicki et al., *supra* note 37

⁷⁴ Czaplicki et al., *supra* note 37.

JUUL-related products (e.g., posting branded promotional messages; URLs linking to commercial websites; hashtags indicating affiliations with commercial sites). Community accounts were defined as accounts that advocate for JUUL use, vaping generally, or promote JUULing/vaping as a lifestyle or recreational activity, but are not identifiable as belonging to an individual person. Instead, these accounts refer to group behavior or peer groups generally (e.g., JUULGang; doit4JUUL, vapelife, etc.). The remaining accounts were labeled as “organic,” meaning they were non-affiliated individual account users. Of the 5,201 users posting JUUL-related content during the study period, 1,360 (26%) were labeled as commercial. Approximately 467 users (9%) were identified as community accounts, and the remaining 3,374 (65%) were labeled as organic users.⁷⁵

The most active Instagram accounts posting JUUL-related content during the time of data collection included commercial or vape retailer accounts (e.g., @vaporandrew, @dashdrips, @jellyphishdreams), JUUL community accounts (@juulcentral, @juulbuzz, @juul.tv, @juul_gang_shit) and community accounts posting popular youth-related memes, including JUUL-related memes (e.g., @sendzone). The three most frequently mentioned terms were #juul, #vape, #juulvapor. This is important because these hashtags function as a common thread of discourse across account types.⁷⁶

⁷⁵ Kostygina A, Feng M, Czaplicki L, et al. Exploring the discursive function of hashtags: A semantic network analysis of JUUL-related Instagram messages. Submitted to *Social Media and Society*, March 2021; under review.

⁷⁶ Kostygina et al., *supra* note 74.

Research found that the context for the use of the #juul hashtags varied across account types. JUUL's commercial accounts primarily used JUUL-related hashtags to engage with vape communities on Instagram or to increase brand visibility. For example, commercial accounts engaged with community accounts by tagging those accounts in their promotional posts. Thus, a vapeshop account that promoted its online store that sold JUUL, would also tag community accounts, like #juulnation. Organic accounts also used JUUL-related community hashtags like #juulnation or #vapelife. But in this group, the community hashtag denoted belonging to a peer group.⁷⁷ The community groups mediated communication between the commercial accounts and the regular users. This makes sense because typically, community and other influencer accounts are viewed as more authoritative and credible sources of information than direct commercial accounts.⁷⁸ So, a corporate strategy of tagging community accounts leveraged the JUUL-related communities to serve as more credible intermediaries to reach organic users with opportunities to purchase JUUL that were disguised as opportunities to belong to a peer group.

The prominence of community-generated promotion of JUUL products on Instagram shows that JUUL's commercial accounts developed successful mechanisms to integrate promotional vape-related content with non-commercial accounts. Importantly, such integration engages and recruits new organic users, particularly through incentivized friend-tagging and repost requests. Studies show that the use of friend-tagging to receive a product discount or engage with other

⁷⁷ Kostygina et al., *supra* note 74.

⁷⁸ Lin, Xialing, "Social Media And Credibility Indicator: The Effects Of Bandwagon And Identity Cues Within Online Health And Risk Contexts" (2016). Theses and Dissertations--Communication. 46. doi:<https://doi.org/10.1016/j.chb.2016.05.002>.

users around vape-related behavior is a powerful mechanism of engagement, used here by JUUL to connect individuals to vape-related content.^{79,80} Further, the friend-tagging strategies exploited the mechanisms of electronic-word-of-mouth (EWOM), to grow size of the organic user networks. Thus, without the commercial JUUL-related content, the JUUL-related vape-community and lifestyle hashtags and accounts would have not existed; similarly, the without the JUUL-related community and lifestyle content, the vast majority of the organic JUUL-related content would not exist.

JUUL's Use of YouTube

YouTube is the most popular social media platform among US teens and young adults – 85 percent of 13-17 year-olds and 90 percent of 18-24 year-olds use the site.^{81,82} Videos on YouTube are easily accessed and widely shared between users and their social networks,^{83,84} and rarely feature any age verification or gating. While YouTube policies prohibit content depicting minors vaping,⁸⁵ the site does not prevent any age group from viewing or

⁷⁹ Kostygina et al., *supra* note 7.

⁸⁰ Allem et al., *supra* note 59.

⁸¹ Anderson et al., *supra* note 3.

⁸² Perrin A, Anderson M. Share of U.S. adults using social media, including Facebook, is mostly unchanged since 2018. 2019, Pew Research Center. <https://www.pewresearch.org/fact-tank/2019/04/10/share-of-u-s-adults-using-social-media-including-facebook-is-mostly-unchanged-since-2018/>.

⁸³ de Boursetty, B. Introducing a new way to share YouTube videos. 2017, YouTube Official Blog. <https://blog.youtube/news-and-events/introducing-new-way-to-share-youtube/>.

⁸⁴ Goel S, Anderson A, Hofman J, Watts D. The Structural Virality of Online Diffusion. *Management Science* 62 (1) 180-196. <https://doi.org/10.1287/mnsc.2015.2158>

⁸⁵ Harmful or dangerous content policies. YouTube Help. <https://support.google.com/youtube/answer/2801964?hl=en>

commenting on vape-related material. User-generated videos about vaping, those that feature reviews, rate products, or promote brands, are particularly popular.⁸⁶

Between 2016 and 2018, videos about JUUL- and JUUL-like devices generated an incredible 260 million views across 8,083 videos and 5,135 channels.⁸⁷ During this period, the number of JUUL-related videos uploaded each month grew from fewer than 200 in 2016 to more than 1,000 by 2018. Among those videos, a small number featured celebrities, but this small group likely reached a significant number of viewers because it has been shown that videos featuring celebrities in marketing campaigns for e-cigarettes is effective strategy for garnering attention. Previous research has shown that videos featuring celebrities have view counts that are four times higher than average.⁸⁸ Many videos appeared on youth-friendly channels, such as those related to popular memes or video games.

Nearly one-quarter of all JUUL-related videos were product reviews with content directly related to use of the product. This is significant since YouTube is where youth seek information and to see how products are being used by peers and others. The 10 most-viewed JUUL product review videos on YouTube achieved over 2 million views on average. The product review videos received an average like-to-dislike ratio of 21.5 likes to 1 dislike, indicating their popularity and virality. Among the top, most viewed vape product review videos, approximately one in four contained descriptors related to flavor; this is important because the video description is used

⁸⁶ Huang J, Kornfield R, Emery S. 100 Million Views of Electronic Cigarette YouTube Videos and Counting: Quantification, Content Evaluation, and Engagement Levels of Videos. *J Med Internet Res*. 2016 Mar 18;18(3):e67. doi: 10.2196/jmir.4265.

⁸⁷ Truth Initiative, *supra* note 19.

⁸⁸ Huang et al., *supra* note 86.

in YouTube's search algorithm, which determines which videos appear in a user's feed.

Examples included mentions of youth-friendly flavors.⁸⁹

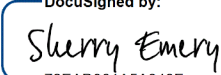
Vape review channels frequently feature personalities or spokespeople who offer high credibility among youth audiences, including social media influencers and personalities who claim a high level of product knowledge. While some of the reviewer videos clearly disclose that they are funded by a brand or vape shop, others reveal their commercial ties only implicitly through promotional discounted offers. It is unlikely that youth can discern brand-sponsorship in vape-related content on YouTube.

Summary of JUUL's Successful Utilization of Social Media to Attract Youth

JUUL's social media promotion was a driver of the epidemic of youth JUUL use. During 2016, the number of JUUL-related posts on Twitter, Instagram and YouTube remained relatively modest, as the brand was building its social media strategy and gaining a foothold with its carefully crafted social selling strategies that are well described in the company's internal marketing strategy reports. JUUL's official accounts and affiliated influencer posts featured artsy, professional grade photographs that communicated sex appeal, social membership, relaxation and freedom—all themes that were used to great effect in the twentieth century to promote cigarette brands, but subsequently banned in the context of cigarette advertising by the MSA. On social media, no such ban existed, and the highly produced and specifically youth appealing content emanating from JUUL's advertising and marketing strategies was perfectly formulated to produce social media virality. As a result, JUUL created a youth-oriented brand

⁸⁹ Truth Initiative, *supra* note 19.

identify.⁹⁰ JUUL's cross-platform social media campaigns were relatively inexpensive to produce, precisely because they relied on the virality that resulted in peer-to-peer propagation of the JUUL brand. Nonetheless, these campaigns achieved remarkably high exposure among youth. In turn, the increase in JUUL-related content across social media was highly correlated with dramatic increases in youth prevalence of using electronic cigarettes, which is not surprising given that seeing electronic cigarette content on social media is likely associated with a greater likelihood of using electronic cigarettes.^{91,92} The vast majority of this increase in youth usage was accounted for by youth preferences for JUUL. At the same time, it was shown that the steeply increasing trends in sales of JUUL were nearly perfectly correlated with the trends in the amount of JUUL-related social media content.⁹³ JUUL's marketing strategies and its marketing campaign were designed to make youth want to use its product. Not only was JUUL's marketing targeted to minors, but prior to JUUL's aggressive and effective marketing, youth were largely uninterested in using electronic cigarettes.

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Sherry Emery

Date: 4/28/2021

⁹⁰ Jackler et al., *supra* note 8.

⁹¹ Pokhrel et al., *supra* note 53.

⁹² Jackler et al., *supra* note 8.

⁹³ Huang et al., *supra* note 32.

Exhibit A

CURRICULUM VITAE

SHERRY EMERY, MBA, PhD

Senior Fellow, Public Health Research

Director, Social Data Collaboratory

NORC at the University of Chicago

55 East Monroe Street, 31st Floor

Chicago, IL 60603

Office: (312) 325-2527

emery-sherry@norc.org

EDUCATION:

Doctor of Philosophy, University of North Carolina—Chapel Hill. Department of City and Regional Planning, 1996. Dissertation: *The Diffusion of Telemedicine Technologies in Hospitals in the Southeastern US: An Empirical Study and Policy Analysis*.

Additional Coursework: Fulfilled coursework requirements at UNC—Chapel Hill for Master's Degree in Economics.

Master of Business Administration, Columbia University. Concentrations in Business Economics and International Business, 1989.

Bachelor of Arts, Johns Hopkins University. Major in Political Economy, 1987.

RESEARCH AND ADMINISTRATIVE EXPERIENCE:

Senior Fellow, Public Health Research; and Director, Social Data Collaboratory, NORC at the University of Chicago. July 2016-present.

Research Professor, Health Policy and Administration, School of Public Health, and Senior Scientist, Institute for Health Research and Policy, University of Illinois at Chicago. January 2014-July 2016.

Associate Research Professor, Department of Economics, and Senior Scientist, Institute for Health Research and Policy, University of Illinois at Chicago. September 2003 –2013.

Assistant Research Professor, Department of Economics, Senior Research Specialist, Institute for Health Research and Policy, University of Illinois at Chicago. September 2001 – 2003.

Assistant Adjunct Professor, Department of Family and Preventive Medicine, University of California, San Diego. January 1999 – July 2001.

Staff Research Associate, Cancer Prevention and Control Program, University of California, San Diego Cancer Center. June 1997 – December 1998.

Director of Research and Communications, North Carolina Trauma Registry. August 1996 – May 1997.

Research Associate, Cecil G. Sheps Center for Health Services Research, University of North Carolina, Chapel Hill. October 1994 – August 1996.

Research Assistant, Department of City and Regional Planning, University of North Carolina, Chapel Hill. September 1991 – September 1994.

Analyst, Office of Technology Assessment, US Congress. August 1989 – August 1991.

TEACHING EXPERIENCE:

Lecturer, Post-doctoral Fellowship in Cancer Education and Career Development, short course on Cost Analysis in Health, University of Illinois at Chicago, Winter 2008 and 2009.

Instructor, Department of Economics, Econ 555, graduate course in health economics, University of Illinois at Chicago. Spring 2003.

Lecturer, Residency Core Curriculum, courses in research design and basic statistics for the residency program, UCSD School of Medicine, Spring 2001.

Lecturer and Small Group Leader, Epidemiology, SOM 218, core curriculum, UCSD School of Medicine, Fall 2000.

Co-Instructor, Cancer Causes and Prevention, FPM 257, elective course, UCSD School of Medicine, Spring 2000.

Teaching Fellow, Department of City and Regional Planning, Curriculum in Public Policy Analysis, University of North Carolina. August 1992 – May 1994.

AWARDS AND GRANTS:

Ongoing Research:

Co-Investigator, NCI/NIH, Assessing the Effects of Cigar and Cigarillo Social Media Promotion on Tobacco and Marijuana Use. Grant R01CA248871-01A1. *Dec 2020 – Nov 2025.* Social media are a major marketing platform for reaching youth and vulnerable populations traditionally experiencing tobacco-related disparities with little cigar and cigarillo promotion. The goal of this project is to assess the intended and unintended effects of exposure to commercial and influencer social media content about cigar products on Twitter and Instagram with tobacco and marijuana product use and sales to inform future tobacco use prevention, education, and marketing regulation efforts.

Senior Research Scientist, CDC Foundation, Maintaining Physical and Mental Well-Being of Older Adults and Their Caregivers During Public Health Emergencies. Subcontract Agreement No. 1085. *September 2020 – December 2020.* NORC is conducting a formative research study on behalf of the National Foundation for the Centers for Disease Control and Prevention with technical assistance from the CDC. The purpose of this study is to examine the physical, emotional, and mental well-being of community-dwelling older adults and their unpaid caregivers during public health emergencies, such as COVID-19. This project also aims to identify public health interventions and strategies available to support older adults and caregivers during public health emergencies. To accomplish these goals, NORC conducted two formative research activities: a needs assessment (involving a national survey, focus groups, stakeholder interviews & survey, secondary data analysis, and social data listening) and environmental scan.

Principal Investigator, Truth Initiative Foundation, Tobacco-Related Social Media Analytics. Research Contract 2020-2021. *July 2020 – June 2021.* This award has funded the continued research of previous tasks and the addition of a fifth task: 1) Tobacco in Popular Culture proof-of-concept study to pilot an approach of monitoring tobacco promotion on social media using influencer accounts popular with youth; 2) publication of an analysis on alternative tobacco product (ATP) content on social media, characterizing prominent topics/themes of posts on both Twitter and Instagram; 3) preparing a brief report on flavored product sales restriction workarounds; 4) an exploratory content analysis of Twitter and Reddit discussions among e-cigarette and vape users surrounding the e-cigarette/vaping associated lung injury (EVALI) outbreak; and 5) an analysis of the intersection of COVID-19 pandemic and nicotine product-related conversations on social media.

Principal Investigator, Robert Wood Johnson Foundation, Understanding the Impact of Flavored Tobacco Bans. Award No. 77440. *June 2020 – July 2021.* In order to support continued FDA review and enforcement of restrictions on sales and access to ENDS, limit states' actions to pre-empt municipal regulations banning or restricting sales of flavored vape products, and encourage states to adopt evidence-based policy recommendations for maximizing public health benefits and minimizing unintended consequences, NORC is conducting a national survey, holding a series of key stakeholder listening sessions and focus groups, and explore social media discourse to fully understand the impact of the bans.

Senior Research Scientist, CDC Foundation, COVID-19 Mental Health Communications Initiative. Subcontract Agreement No. 1085. *April 2020 – March 2021.* NORC in collaboration with CDC is developing and implementing a public health social marketing and behavior change campaign that promotes stress management, mental health, and resilience during the COVID19 outbreak response targeting at-risk individuals and vulnerable populations. The project includes rapid formative research; product development and dissemination specifically including campaign strategy and message testing; and a comprehensive evaluation including on-going social listening.

Co-Investigator, NCI/NIH, Assessing the Effects of Smokeless Tobacco Marketing in a Rapidly Changing Media Environment. Grant R01CA234082-01A1. *Sept 2019 – Aug 2022.* Rural youth and young adults have the highest rates of smokeless tobacco consumption and have high levels of social media use. Social media are increasingly used by the tobacco companies to market non-cigarette tobacco, however, no studies to date have examined the consequences of exposure to this content on social networking platforms. This project will fill that gap by analyzing the relationship between Instagram, Twitter, and Facebook smokeless tobacco promotion and smokeless use, to offer insights and to future develop concepts and technologies to help prevent exposure to tobacco product marketing on social media sites among youth and vulnerable populations.

Co-Principal Investigator, Robert Wood Johnson Foundation, *Corporate Reporting and a Culture of Health Using Social Media Analysis.* Grant #75752. This study will advance RWJF's knowledge of corporate disclosure on social media of their actions related to health and/or the social determinants of health. This research will also help RWJF assess its own investments in corporate culture of health-related grantees, such as Panorama Global, and inform their knowledge of the role that midsize companies can play in advancing a corporate culture of health. Roy Ahn, NORC, Co-Principal Investigator, 2018 - 2019.

Co-Investigator, DHHS CDC OSH, *OSH Evaluation and Research Support*. Contract #HHSD2002013M53955B. This project will support the Epidemiology Branch of OSH to develop protocols and indicators for national and state evaluation, maintain the National Quitline Data Warehouse, obtain and analyze tobacco retail, marketing and consumption data, conduct qualitative research to inform the validity and reliability of tobacco surveys, and develop national key outcomes indicators for addressing disparities in tobacco use and dependence. Caitlin Oppenheimer, NORC, Principal Investigator, 2018 – 2022.

Co-Investigator (subaward), Georgia State University, *Administrative Supplement to Assessing the Intended and Unintended Consequences of E-cigarette TV Advertising*. NCI/FDA R01 CA 194681 - REVISED. The parent project will examine the direct effects and the unintended consequences of televised e-cigarette advertising on youth and young adult use of ENDS products. This administrative supplement will look at the effects of social media marketing on awareness, initiation, and behavior of ENDS products. Jidong Huang, GSU, Principal Investigator. 2018 – 2019.

Principal Investigator, *An Analysis of JUUL-Related Marketing and Promotional Messages on Social Media (Twitter and Instagram)*. Truth Initiative Foundation research grant. The overarching goal of this project is to explore and characterize the amount, content, and sources of promotional and marketing messages for the JUUL vaping device on social media platforms. 2018 - 2019.

Principal Investigator (subaward), *The Impact of Tobacco Control Policies on Health Equity in the United States*. NIH/NCI R01 CA 214787. The overall goal of this research project is to understand how the implementation of various tobacco control policies influence smoking initiation and cessation differently by socio-demographic subgroups. Nancy Fleischer, U Michigan, Principal Investigator. 2017 – 2022.

Co-Investigator, *Covered California Consumer Tracking Survey*. State of California research contract. NORC will offer consumer research and evaluation for Covered California (CCA) to measure and assess consumer awareness, attitudes, knowledge and impact of CCA brand and presence, advertising efforts, and member satisfaction. Larry Bye, NORC, Principal Investigator. 2017 – 2019.

Principal Investigator, *Tobacco Counter-Marketing Intensity Reports*. CDC Contract (flow through from Carter Consulting). This project will collect and review all televised advertising from 2014 and 2015, identify state sponsored anti-tobacco advertising, and prepare a comprehensive summary report of quarterly tobacco control media campaign GRPs for all 50 states and DC. 2016 - 2019.

Principal Investigator (subaward), Georgia State University, *Assessing the Intended and Unintended Consequences of E-cigarette TV Advertising*. NCI/FDA R01 CA 194681. This project will examine the direct effects and the unintended consequences of televised e-cigarette advertising and provide timely scientific bases for FDA's Deeming Rule and any future potential regulatory actions on restricting marketing for Electronic Nicotine Delivery Systems (ENDS). Jidong Huang, GSU, Principal Investigator. 2015 – 2020.

Completed Research:

Principal Investigator, *Tobacco Industry Corrective Advertisement Analysis*. Truth Initiative Foundation research grant. The overall objective of the project is to describe the nature of timing, and population exposure to the tobacco industry corrective advertising campaigns on broadcast media and on social media. 2018.

Principal Investigator (subaward), University of Pennsylvania, *UPENN TCORS: Tobacco Product Messaging in a Complex Communications Environment (Media Data Acquisition and Content Analysis Core)*. NCI 1P50 CA 179546. The MDACA Core will acquire and archive social media data from public and syndicated sources for the UPenn TCORS projects. In addition, the MDACA will develop and document the methodology, tools, and procedures to reduce, clean, and manage the large social datasets. Robert Hornik & Caryn Lerman, UPenn, Co-Principal Investigators. 2013 – 2018.

Co-Principal Investigator, National Science Foundation III: Small: Collaborative Research: *Reducing Classifier Bias in Social Media Studies of Public Health*. NSF 1659139 (formally NSF 1524750). This project will investigate a suite of bias-reduction techniques to improve the validity and robustness of public health studies conducted by applying statistical classifiers to social internet data. Aron Culotta, IIT, Co-Principal Investigator. 2015 – 2018.

Principal Investigator (subaward), *Centers for Disease Control and Prevention Division of Community Health Task 4: Communication Evaluation*. CDC Contract (flow through FHI 360). The purpose of this contract was to develop a powerpoint deck and draft manuscript presenting findings from a prior analysis of coded health adds included in CDC's Community Health Media Center (CHMC). Thomas Lehman, FHI 360, Principal Investigator. 2017.

Principal Investigator, *Tobacco Control in a Rapidly Changing Media Environment*. NCI 5U01 CA154154-05. The overarching goals of the proposed project are a) to develop an understanding of the amount and variety of tobacco-related information that both smokers and nonsmokers encounter, seek out, and exchange across media platforms, and b) to analyze the relationships between that information and attitudes, beliefs and smoking behavior. This research is critically important because the mass media landscape has fundamentally

transformed over the past five years, with the growing fragmentation of traditional broadcast media and proliferation of increasingly sophisticated Internet marketing and advertising strategies, social networking (e.g., Facebook, Twitter, and YouTube), and mobile messaging. These rapid changes in the media environment have important implications for state and community tobacco control. 2011 - 2017.

Principal Investigator, *Social Media Evaluation of the 'Tips from Former Smokers' Campaign*. Administrative Supplements to NCI U01 CA 154254. The effectiveness of using social media in a national anti-smoking mass media campaign is relatively under-studied. Public discussion on social media about a campaign represents an important form of earned media, potentially amplifying the message, increasing exposure, and also providing important feedback about how much and in what ways the campaign resonates with its audience. 2013 – 2017.

Principal Investigator, *Social Media Evaluation of Legacy's Truth Campaign*. Research grant from American Legacy Foundation. This project measured, characterized, and analyzed the amount and content of social media messages related to tobacco use, social norms related to tobacco, policy ideas, marketing and counter-marketing across social media platforms to offer unique insights into the impact of Legacy's Truth campaign. 2016 – 2017.

Co-Principal Investigator (subaward), *The Relationship between TV Implementation Variables and Quitline Call Volume*. CDC research contract (flow through from RTI). The overarching goal of this project was to examine how television advertising strategies to increase tobacco cessation varied by ad placement variables (i.e. time of day, day of week, type of media channel, type of ad, TV show content, and other ad content). Given that television advertising is the primary channel for delivery of the *Tips* Campaign, evaluation of these variables offered useful information to support campaign planning for target audiences. Kevin Davis, RTI, Principal Investigator. 2016 - 2017.

Co-Investigator, *Monitoring and Assessing the Impact of Tax and Price Policies on US Tobacco Use*. NCI U01 CA 154248. The overarching aim of this project was to improve our understanding of the impact of tobacco tax and price policies on tobacco use and related behaviors. Frank Chaloupka, UIC, Principal Investigator. 2011 – 2016.

Co-Investigator, *Online Media and Structural Influences on new HIV STI cases in the US (2006 to 2020)*. NIAID R56 AI114501. This project concerns social and online media influences on HIV/STI transmission behaviors. Twitter is a rich data source that can be accessed in real-time and a subset of tweets can be mapped to state, county, and even zip-code regions of origin. We expect that sociodemographic variables (e.g., poverty) and Twitter content will predict HIV, and that these two factors interact. In the long term, we are planning to extend these studies to predict future outbreaks of HIV. Dolores Albarracin, UIUC, Principal Investigator. 2015 – 2016.

Co-Investigator, *The Impact of Media Marketing and Prices on Sales of Electronic Nicotine Delivery Devices*. CDC 200-2014-M-60284. The purpose of this project was to evaluate the impacts of media marketing and prices of tobacco products on sales of e-cigarettes to facilitate policy development for the Office on Smoking and Health. Jidong Huang, UIC, Principal Investigator. 2014 – 2015.

Principal Investigator (subaward), *Social Media Messaging and Public Health Campaigns: California Proposition 29*. TRDRP award 22RT-0144 (flow through from UCSD). Social media use has spread rapidly and Proposition 29 was the first cigarette tax increase proposed since the social media revolution. This study collected data from traditional and social media footprints and analyzed media strategies and practices that may have influenced California voters during the Proposition 29 campaign. John P. Pierce, UCSD, Principal Investigator. 2013 – 2015.

Co-Principal Investigator, *Televised Direct to Consumer Pharmaceutical Advertising and Patient Outcomes*. NHLBI R01 HL 107345. The pharmaceutical industry spends billions of dollars each year on direct-to-consumer advertising (DTCA) of prescription drugs. The US is the only country in which these ads are allowed on television, and their impact is controversial. This project will examine the effects of DTCA on health care utilization and pharmaceutical sales across therapeutic classes, and to explore the interaction of individual characteristics, contextual influences, and ad characteristics on the relationship between DTCA and health care utilization and sales. Caleb Alexander, Johns Hopkins University, Co-Principal Investigator. 2011 - 2015.

Co-Investigator, *Increasing Young Adult Smokers' Demand for Internet Based Cessation Treatment*. NCI R01 CA134861. The goals of this study are to implement a 4-phase research plan to develop and evaluate theoretically derived internet strategies to increase young adult smokers' use of on-line cessation treatment support and to conduct a longitudinal evaluation of treatment participation and outcomes in a population-based cohort of on-line treatment seekers. Susan Curry and Robin Mermelstein, Co-Principal Investigators. 2009 - 2014.

Principal Investigator, *Smoking-Related Television Advertising and Population Smoking*. NCI R01 CA123444. This research project investigates the impact of smoking-related TV advertisements on whether and how much youth, young adults, and adults smoke, and how they think about smoking. 2007 - 2011.

Principal Investigator, *Characterizing and Coding Anti-Smoking Advertising*. CDC 5U48DP000048-05. This project developed and implemented codes for the executional characteristics of anti-smoking ads broadcast across the top 75 media markets in the US between 1999 and 2003. These codes were used to provide state-level descriptive reports of the number and types of anti-smoking ads most widely seen. 2008 - 2009.

Principal Investigator, *Smokeless Tobacco Message Testing and Marketing Surveillance*. CDC 5U48DP000048-02. This project conducted formative research, to explore audience understanding, interpretation of, and reaction to messages developed by the Centers for

Disease Control and Prevention (CDC) about smokeless tobacco products, and smoking cessation interest and treatment seeking among young adult smokers. 2008 - 2010.

Principal Investigator, *Anti-Drug Advertising and Youth: Illicit Drug Use Attitudes, Beliefs and Behaviors*. Substance Abuse Prevention Research Program (SAPRP), Robert Wood Johnson Foundation. This research project investigated the impact of anti-drug TV advertisements on whether and how much youth use illicit drugs, and how they think about illicit drug use. 2007 - 2009.

Co-Investigator, *Evaluation of the Chicago Tobacco Prevention Project (CTTP)*. Respiratory Health Assoc of Metro Chicago, CDC Communities Putting Prevention to Work (CPPW) Program. The RHA aims to implement citywide policy, environmental and systems change strategies designed to decrease tobacco use and exposure to secondhand smoke, with concentrated efforts aimed at high-burden population groups. UIC has been funded to evaluate the CTTP. Robin Mermelstein, Principal Investigator. 2010 - 2012.

Co-Investigator, *Television Advertising and Children's Diet, Activity and Obesity Prevalence*. NCI R01 CA138456. This project will investigate the relationships between televised advertisements for food, beverages, restaurants, and public service healthy diet and physical activity (HDPHA) health promotion messages, and diet, physical activity, body mass index (BMI) and obesity among children and youth. Lisa Powell, Principal Investigator. 2010 - 2013.

Co-Investigator, *Youth Smoking and the Media* (25% effort for 7 years). (1 R01 CA86273-01). Melanie Wakefield (Anticancer Council of Victoria, Australia), Principal Investigator. 2000 - 2006.

Co-Investigator, *Helping Young Smokers Quit: Identifying Best and Worst Practices in the Treatment of Youth Tobacco Use and Dependence* (50% effort for 6 years) Robert Wood Johnson Foundation (4150). Susan J. Curry, Principal Investigator. 2002 - 2008.

Co-Investigator, *ImpacTeen: A Policy Research Partnership to Reduce Substance Use* (25% effort for 6 years). Robert Wood Johnson Foundation. Frank J. Chaloupka, Principal Investigator. 2001 - 2007.

Principal Investigator, *Promoting Compliance with Smokefree Schools: Changing Social Norms* (25% effort for 1 year). University of California Tobacco Related Disease Research Program. SARA (Schools and Academic Research Award), Pilot Project. 2000 - 2001.

Principal Investigator, *An Economic Analysis of Factors Influencing Teen Smoking* (50% effort for 4 years). University of California Tobacco Related Disease Research Program. New Investigator Award. 1998-2001.

US Department of Health and Human Services, Office of Rural Health Policy, two-year research fellowship as part of Rural Health Research Center Grants. 1994-1996.

University Merit Fellowship, University of North Carolina, 1991-1992.

PUBLICATIONS:

Peer-Reviewed Articles:

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4. R. Rutledge, Osler T, **Emery S**, Kromhout-Schiro S, The end of the Injury Severity Score (ISS) and the Trauma and Injury Severity Score (TRISS): ICISS, an International Classification of Diseases, Ninth Revision-based prediction tool, outperforms both ISS and TRISS as predictors of trauma patient survival, hospital charges, and hospital length of stay. *Journal of Trauma*, 44(1):41049, 1998.
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18. Wakefield M, Durrant R, Terry-McElrath Y, Ruel E, Balch GI, Anderson S, Szczypka G, **Emery S**, Flay B. Appraisal of anti-smoking advertising by youth at risk for regular smoking: A comparative study in the United States, Australia, and Britain. *Tobacco Control*, 12 (Suppl II): ii82-ii86, 2003.
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70. **Emery S**, Cappella J, Kim A, Kostygina G. Tobacco control in a rapidly changing media environment. Pre-Conference Workshop at the Society for Research on Nicotine and Tobacco Annual Meeting; March, 2016; Chicago, IL.
71. **Emery S**, Tran H, Kim Y, Huang J. Dual use and quitting behavior among users of traditional cigarettes. Paper presented at the Society for Research on Nicotine and Tobacco Annual Meeting; March, 2016; Chicago, IL.
72. Huang J, Binns S, Shi Y, Tran H, **Emery S**, Carrión V. An analysis of quantity and content of three-year electronic cigarette promotion on Twitter. Poster presented at the Society for Research on Nicotine and Tobacco Annual Meeting; March, 2016; Chicago, IL.
73. Szczypka G, Cortese D, Wang S, Illakkuvan V, Hair E, Vallone D, **Emery S**. Smoking selfies: Using Instagram to examine smoking behavior. Poster presented at the Society for Research on Nicotine and Tobacco Annual Meeting; March, 2016; Chicago, IL.
74. Emory K, Vera L, Trinidad D, **Emery S**. National Evidence LGBT are More Frequently Exposed to Tobacco Messages on Social Media but Not on Television. Society for Research on Nicotine and Tobacco Annual Meeting; March 2016; Chicago, IL.
75. Kim Y, Tran H, **Emery S**. Tobacco related conversations on Twitter and smoking. Poster presented at the Society for Research on Nicotine and Tobacco Annual Meeting; March, 2016; Chicago, IL.
76. Peterson K, Binns S, Huang J, **Emery S**. From "vape" tricks to brand promotion: Assessing YouTube video content related to electronic cigarettes. Paper presented at the Society for Research on Nicotine and Tobacco Annual Meeting; March, 2016; Chicago, IL.

77. Kostygina G, Tran H, Shi Y, **Emery S**. When you hit the blunt too hard: Influx of organic conversation on cigarillo and marijuana co-use on Twitter. Poster presented at the Society for Research on Nicotine and Tobacco Annual Meeting; March, 2016; Chicago, IL.
78. Shi Y, Kim Y, Kostygina G, **Emery S**. Efficient Sampling Strategy for SVM through Semi-Supervised Active Learning. Joint Statistical Meeting; August 2016; Chicago, IL.
79. **Emery, S**. The HMCollab Approach to Social Data Analytics and the Social Data Center. National Opinion Research Center External Advisory Committee on Statistics, Machine Learning and High Performance Computing; November, 2016; Bethesda, MD.
80. Kostygina G, Tran H, **Emery S**. Follow even if you don't smoke: The amount and themes of cigarillo and marijuana co-use content on Instagram. Paper accepted to the 144th Annual Meeting of the American Public Health Association; November, 2016; Denver, CO.
81. **Emery, S**. Data Collection Methods and Standards in the Age of Social Media. Pedagogy hour at Midwest Association for Public Opinion Research Conference; November 2016; Chicago, IL.
82. **Emery S**, Kim Y, Kostygina G. A road map for rigor, transparency, and replicability in social media research for public health. American Public Health Association Annual Meeting, November 2016; Denver, CO.
83. Kostygina G, **Emery S**, Ling P. Staying ahead of the curve: How a major tobacco corporation monitored social media to evaluate consumer perceptions and engage within the online dialogue. Paper presented at the American Public Health Association Annual Meeting, November 2016; Denver, CO.
84. Zhan Q, Zhang J, Yu P, **Emery S**, Xie J. Inferring social influence of anti-tobacco mass media campaigns. Paper presented at the IEEE International Conference on Bioinformatics and Biomedicine (BIBM); December, 2016; Shenzhen, China.
85. **Emery, S**. The HMCollab Approach to Social Data. Northwestern University Health Communications ProSeminar, February 2017; Chicago, IL.
86. **Emery S**, Kim Y. A Road Map for Rigor, Transparency & Replicability in Social Media Research for Public Health. Oral presentation at UPENN TCORS Lecture Series; March 2017; Philadelphia, PA.
87. Kostygina G, Kim Y, Tran H, Shi Y, **Emery S**. Exposure to smoking imagery on social media: Implications for youth and young adults. Oral presentation at Society for Research on Nicotine and Health, March 2017; Florence, Italy.
88. **Emery, S**. Social Media Data Analysis: Introducing Some Innovative, Rigorous, and Interdisciplinary Methods. Oral presentation at CDC Roundtable, CDC Evaluation Group, April 2017; Atlanta, GA.
89. Shi Y, Kim Y, **Emery S**. Efficient Sampling Strategy for SVM through Semi-Supervised Active Learning. Oral presentation at UPENN TCORS Lecture Series, April 2017; Philadelphia, PA.

90. **Emery, S.** The HMC Approach to Social Data. Oral presentation at NORC's Grid Program, April 2017; Chicago, IL.
91. **Emery S.** The HMCollab Approach to Social Data. Oral presentation at NORC's INPRO Departmental Meeting, May 2017; Chicago, IL.
92. Kostygina, G., **Emery S.**, et al. Increasing Trust in Social Media Research through Improving Disclosure Standards. 72nd American Association for Public Opinion Research Annual Meeting, May 2017; New Orleans, LA.
93. **Emery S**, Kim Y. MDACA Mini Series: Data Collection on Twitter: the Story of Goldilocks and three APIs. Oral presentation at UPENN Tobacco Centers for Regulatory Science Seminar, June 2017; Philadelphia, PA.
94. Kostygina G, Bye L, Kim Y, Dickman I, **Emery S.** Information exposure, seeking and sharing in the emerging media environment: Definitional and measurement considerations. Poster at CDC National Conference on Health Communications, Marketing and Media, August 2017; Atlanta, GA.
95. **Emery, S.** HMC approach to social data. Oral presentation at NIDA's Workshop: Social Media, Mobile Technology, and Youth Risk Behaviors, October 2017; Bethesda, MD.
96. Kostygina G, Tran H, **Emery S.** Thank you for reppin': Social media user engagement with cigarillo and marijuana-related accounts on Instagram. Poster presentation at American Public Health Association Annual Meeting, November 2017; Atlanta, GA.
97. Kostygina G, Kim Y, Shi Y, **Emery S.** Exploring the effects of exposure to smoking imagery on social media on combustible tobacco and marijuana smoking status. Poster presentation at American Public Health Association Annual Meeting, November 2017; Atlanta, GA.
98. Kostygina G, Kim Y, **Emery S.** Using tobacco products as a delivery method for marijuana: Prevalence and correlates of co-use, blunting and vaporization. Oral presentation at American Public Health Association Annual Meeting, November 2017; Atlanta, GA.
99. **Emery S**, Kim Y. Do different twitter data sources matter? The story of Goldilocks and three APIs. Oral presentation at NORC's Annual Meeting of the Advisory Committee on Statistics, Machine Learning, and High Performance Computing; November, 2017, Chicago, IL.
100. **Emery S.** Campaign evaluation in the changing digital world. Oral presentation at Agents of Change Summit, February 2018; San Diego, CA.
101. Kostygina G, **Emery S.** How JUUL marketing on social media appeals to youth: Exploring amount, themes, and source of JUUL-related Instagram content. Oral presentation at NIH Tobacco Regulatory Science Meeting and Plenary Symposium, June 2018; Bethesda, MD.
102. Kostygina G, Szczypka G, **Emery S.** Exploring JUUL promotion strategies on Instagram: Amount, source, and youth appeal. Oral presentation at CDC National Conference on Health Communications, Marketing, and Media (NCHCMM), September 2018; Atlanta, GA.

103. Kostygina G, Szczypka G, Tran H, Binns S, **Emery S**, Willett J, Vallone D, Hair E. Social media conversation about the tobacco industry corrective statements advertisement campaign: Analysis of audience exposure and reach. Poster presentation at American Public health Association Annual Meeting and Expo, November 2018; San Diego, CA.
104. Kostygina G, Binns S, Tran H, Szczypka G, **Emery S**, Hair E, Vallone D. Anti-tobacco campaign support, opposition, and reach on twitter: The role of influencers and memes. Poster presentation at American Public health Association Annual Meeting and Expo, November 2018; San Diego, CA.
105. **Emery S**. In the bathroom JUULin: How JUUL and JUUL compatible products appeal to youth on social media. Oral presentation at Truth Initiative Foundation Plenary Session, November 2018; Washington, DC.
106. Hornik, Gibson, Binns S, **Emery S**, Epstein, Jeong, Kim K, Kim Y, Kranzler, Lee, Liu, O'Donnell, Siegel, Tran, Volinsky, Williams, Yang. Effects of mass media and social media coverage of anti-tobacco content on youth and young adult smoking intentions. Oral presentation at Society for Research on Nicotine and Tobacco (SRNT), February 2019; San Francisco, CA.
107. Kostygina G, Kim Y, Szczypka G, **Emery S**, Czaplicki, Perks, Hair. #NicHeads: Does social media promotion of JUUL and JUUL-compatible products trivialize nicotine addiction? Poster presentation at Society for Research on Nicotine and Tobacco (SRNT), February 2019; San Francisco, CA.
108. Hornik, Gibson, Sangalang, Vollinsky, Williams, Kim Y, Binns S, **Emery S**. Consistency of messages across media sources for tobacco and electronic cigarettes over 36 months: Evidence for a public communication environment. Poster presentation at Society for Research on Nicotine and Tobacco (SRNT), February 2019; San Francisco, CA.
109. Huang, **Emery S**, Kim Y, Chaloupka. Does e-cigarette TV advertising influence use of nicotine replacement therapy (NRT) products: Evidence from retail sales data. Poster presentation at Society for Research on Nicotine and Tobacco (SRNT), February 2019; San Francisco, CA.
110. Berg, Haardoerfer, Cahn, Binns S, Kim Y, Szczypka G, **Emery S**. Does social media activity predict or reflect individual behavior over time? E-cigarette purchasing as a case example. Poster presentation at Society for Research on Nicotine and Tobacco (SRNT), February 2019; San Francisco, CA.
111. Gibson, Siegel, Kranzler, Volinsky, O'Donnell, Williams, Yang, Kim Y, Binns S, Tran H, Maidel-Epstein, Leffel T, Jeong, Liu, Lee, **Emery S**, Hornik. Automated content analysis to quantify theme mentions in e-cigarette and other tobacco coverage across mass media and social media sources. Poster presentation at Society for Research on Nicotine and Tobacco (SRNT), February 2019; San Francisco, CA.

112. Ngo, Shang, Huang, Chaloupka, **Emery S.** Preferences for electronic nicotine delivery systems among young adults: Results from an online discrete choice experiment. Poster presentation at Society for Research on Nicotine and Tobacco (SRNT), February 2019; San Francisco, CA.
113. **Emery S.** Social media and public health research: A road map for rigor, transparency, & replicability. Oral presentation at UConn Center for mHealth and Social Media Conference, May 2019; Storrs, CT.
114. Feng M, Kostygina G, Szczypka G, **Emery S.** Vaping together, tweeting together: Support and opposition for anti-ENDS campaigns on Twitter. Oral presentation at International Communication Association (ICA) Conference, May 2019; Washington, DC.
115. **Emery S.** Obesity-prevention ads: Ad characteristics associated with perceived ad effectiveness. Poster presentation at APHA Annual Meeting and Expo, November 2019; Philadelphia, PA.

OTHER:

Grant Reviewer:

Office of Rural Health Policy, US Department of Health and Human Services, 1994-1995.

University of California at San Diego Cancer Center Protocol Review and Monitoring Committee, 1999-2001.

Robert Wood Johnson Foundation, 2000.

University of California Tobacco Related Disease Research Program (TRDRP), 2006.

National Institutes of Health, Community Level Health Promotion (CLHP) Study Section ad hoc member, 2006-present.

Chair of Policy Study Section, University of California Tobacco Related Disease Research Program (TRDRP), 2014, 2015.

National Institutes of Health, 2019.

Journal Reviewer: *Journal of Rural Health, Tobacco Control, American Journal of Preventive Medicine, American Journal of Public Health, Nicotine and Tobacco Research, Cancer Causes and Control, Addiction, Annals of Behavioral Medicine, Journal of Health Economics, Cancer Epidemiology, Biomarkers and Prevention, Journal of Communication.*

Memberships: Society for Nicotine and Tobacco Research, Western Economics Association, American Public Health Association, Tobacco Health Disparities Research Network, American Association for Public Opinion Research.

Fellow, Class of 2000, UCSD National Center for Leadership in Academic Medicine.

Exhibit B

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Jessica Edmonson-Taylor (Juul)Transcript2

Jessica Edmonson-Taylor (Juul)Transcript1

Jessica Edmonson-Taylor (Juul)